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The Isolation of Mountain Peoples

THE ISOLATION OF MOUNTAIN PEOPLES

BY

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FOR THE

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..... May 25, 1917

THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

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THE ISOLATION OF MOUNTAIN PEOPLES

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THE ISOLATION OF MOUNTAIN PEOPLES

I. Introduction

How much, in the life of an individual or people, is due to heredity, and how much to environment has been a long debated question. Some attempt to show that heredity is the dominating factor; others that it is environment. But a distinction must be made between human and physical environment; only the latter will be considered in this paper. How much is due to the one and how much to the other is not within the scope of the present paper. Neither is it the purpose to disparage or in any way ignore the fact that heredity counts for much in the general makeup of the character of individuals. Nor is it the purpose to show that geographic environment is the sole factor in determining the characteristics of a person or a people. But it is an established fact that geographical surroundings are a determining factor, and if investigation of peoples of widely separated regions, but living under similar geographical conditions, reveals certain peculiar and correlated characteristics, it will show much concerning the power and influence of environment. It shall be the purpose to show that there is a geographic basis at the bottom of many human activities. It is not claimed that it is the only basis, nor the whole basis, but that it is a deciding factor can hardly be disputed. It is fully acceded that man has been, and will continue to be, a great factor in shaping and molding history and historical events, but that even back of man and history there is, in a great many cases, a geographical cause, becomes evident when the facts are fairly faced by an unbiased mind.

Bowman¹ says, "It is the province of geography to study the

present distribution and character of men in relation to their surroundings, and these are the facts of mankind that must forever be the chief data of economic history. It is not vain repetition to say that this means, first of all, the study of the character of men in the fullest sense. It means, in the second place, that a large part of the character must be really understood. Whenever this is done there is found a geographic basis of human character that is capable of the clearest demonstration. It is in the geographic environment that the material motives of humanity have struck their deepest roots!

Of the importance of geographic influence, Brigham² says, "Here we deal with the heart of geography. The ties, infinite in number, which bind life to the earth, lead surely up to man. No other phase of the subject is so insistent and so appealing as the earth's influence upon our kind. The plant and animal world joins itself to our physical habitat to enrich our environment and multiply our problems. Geography offers help and cooperation to all sciences that deal with man--anthropology, ethnology, history, sociology, economics, psychology, and comparative religion--and from each of these geography will gather data for its own perfecting."

Concerning the power of geographic environment among the Khirghiz nomads, Huntington³ says, "Wherever I have found the Khirghiz living unrestrictedly under their normal nomadic conditions among the mountains, whether north, west, or south of the Lop basin, they appear to have essentially the same habits and character. So far as I can learn the Indo-European nomads to the west of the Lop basin Wakkin and Sarikol and the Mongol nomads of Buddhist faith to the east in northern Tibet and eastern Tian Shan, all of whom live under physical conditions similar to those of the Turanean Khirghiz have

very similar habits and character in spite of differences in race and religion. This suggests that environment is in this case more potent than either race or religion in determining habits and even character, provided, of course, environment is operative long enough."

In this paper investigations will be conducted to show that certain conditions prevail among mountain peoples and that these conditions reflect themselves in certain characteristics in the lives of such peoples. It will further be shown that back of all these is geographic control. Believing the factor of geographic control to be a vital one, and that man working in harmony with his environment--can achieve results--can make environment work to his advantage, an attempt will be made to outline certain methods of constructive geography that may perhaps enable the mountaineer to improve his lot.

II. Conditions and Characteristics

In a region where railroads are easily graded, where other forms of communication such as telegraphs, telephones, mail deliveries, churches, and schools, and many other socializing influences are easily brought into existence and maintained, the thought seldom occurs that in many mountain districts of the world, where such influences and institutions are almost or wholly unknown, living conditions are still in relatively a primitive state. Speaking of conditions in our southern mountains, President Frost of Berea College, located in the mountains of Kentucky, says,⁴"This is the best type of isolated mountain life. Beside it are types less hopeful. And even this idyllic condition must be further described by some reference to the early marriages, gambling, idleness of the vacant winter months, and other evils which beset a people who have few resources in books and education. Saddest of all is the bewildering lack of educated or well informed leaders. There may be twenty counties in one group which do not contain a printing press. The average preacher of the mountains is inclined to be suspicious of 'book larnin' which he has failed to acquire. Religion itself is chiefly a melancholy affair connected with funerals and sectarian squabbles. And thus we have the startling anomaly of illiterate Protestants--Americans who are behind the times."

One of the greatest and most outstanding general characteristics of mountain peoples is their general retardation. In these regions, the people have stood still while all the world around them has progressed along all lines. The Kentucky mountain region has been likened to a Sargasso sea with the great whirl of civilization

and progress eddying all about it. Few modern improvements or inventions have ever been heard of and the same implements of labor which were used by their ancestors a century, and in some cases several centuries ago, are still in use by these mountain peoples.⁵ Here the spinning wheel and loom of the eighteenth century are found in almost every home, and all the clothing worn, poor and scarce in many cases, is made from wool sheared from the backs of the deteriorated sheep of the small mountain farm. The farmer tills the infertile, hostile hillsides with a plow little more than the iron-shod wooden implement of the earliest pioneers of the United States, and other tools of a similar antiquated nature. He knows little of fertilization or rotation of crops, and new fields have to be cleared or deadened as the process of erosion swiftly tears the soil from those under cultivation and carries it away.

In the mountainous part of the Godavari region of India agriculture is carried on by the reforestation process, the trees being burned off and a few crops secured, then the land allowed to grow up to forest again. Keenan⁶ says of the mountain people of Daghestan, that here it is possible to study the society of England before the Norman conquest. Many customs and legal processes, obsolete everywhere else for a thousand years still persist in these mountain fastnesses. Men and ideas are distinctly of the tenth century type.

Not only do agricultural customs of the eighteenth century persist in the Southern Appalachians, but here too is heard the English of the same or of an earlier period. The early pioneers who pushed inland from the coast struck the mountains and either passed over the first ridges or down around the southern end. As they

worked their way through the wilderness of North Carolina, Tennessee, and Eastern Kentucky, some of them moved up into these parallel valleys and there their descendents remain to this day. Little intercourse with other people, in fact less and less as the years have passed, has preserved the Anglo-Saxon speech better here than anywhere else in America. Such words and phrases as "hit", "holp", "pint blank", "lo' ye" (look), "whar", "thar", "tetchy", "mought and agin you moughtn't", "furriners", "pied", "yon side", "ill turned", and "mannerly turn", are of every day usage.⁷ This is also illustrated in the Scottish Highlands, where, in spite of successive invasions by Cimri, Roman, Dane, Angle, and Norsemen, the ancient Gaelic tongue still survives.

Sharp⁸ of England has discovered that in our own Southern Appalachians the old folk songs of England are still being sung in all of their simplicity and earnestness, although the American versions often differ from the English. His investigation revealed the fact that over four hundred of these songs and ballads have been preserved here.⁹ The ballads of the Scotch Highlands go back to the days of the border raid, tragic love, or deeds of chivalry. All these characteristics have disappeared from the lowlands to the south.

Similarly, Keenan¹⁰ mentions the music of the people of Daghestan. They are fond of music, and have a gifted poetic sensibility. There, as in our own mountains, the people give utterance to their poetical thoughts in a sort of chanted soliloquy which is very expressive and very beautiful.

In general it may be said that the people of mountain districts are very poor, often miserably so. The soil is usually poor

and yields small returns even to the most industrious attempts of the poor unskilled farmer. Having little to sell, they have little money, and as a result buy or exchange very little. In the Appalachian region the people rarely leave their respective coves except to go to the country store to "trade" the little they produce for the few things which the bare necessities of life demand.

But if the mountaineer is poor, he is also, as a rule, honest. He may lie, he may shoot, he may be inclined to other sorts of lawlessness, but he does not steal.¹¹ Horse stealing is considered to be the very worst of crimes and stealing of saw-logs comes next to this. It should not be overlooked, that in some mountain regions, the people are of a marauding nature and honesty is not among such so much a virtue after all. But pillaging expeditions are usually caused by failure in the mountains and in localities where the mountaineer can look down from his bleak habitation upon plains of plenty, and the temptation becomes more than he can resist.¹² There seems to be a tendency to outgrow this marauding inclination and for such people to become honest. Crime among mountain peoples, according to Semple, is against persons rather than against property.

Though the people are poor and the families as a rule quite large, the ties which bind children to each other and to their parents are as strong as are to be found anywhere. The members of the home circle are drawn closely together by a common interest and the same interest that causes them to be good lovers also causes them to become good haters, when in any way assailed or attacked from without. Because both men and women have frequently to work all day in the field, the children often have to pass through many days of trying lonesomeness. Boys and girls of the poorer families, early in life

begin "working out" for the more wealthy neighboring farmers, the girls frequently not getting more than a dollar a week for their labor. The boys often seek jobs away from home. Because of the isolated conditions, medical aid is not always procurable, and contagious diseases often carry away children in large numbers.¹³ One mountaineer tells a pitiful story of his little brother being taken by diphtheria just because they were out of reach of a physician.

Living under such restricted conditions tends toward a closer related community. The children marry very young, often as early as twelve or fourteen, and frequently marry those closely related to them.¹⁴ One instance is related of a school district in which there were ninety-six pupils, and of these, ninety-one were related to one man and his wife. Such close relationship and intermarriage tends to promote the clan spirit among these people, and is to a great degree responsible for the great feuds of which so much is heard.

Another characteristic of mountain peoples the world over is their intense love of independence. The people, separated and left to themselves, are almost entirely supported from the home farm and the spirit of self-reliance is engendered. Their environment is not conducive to large units of control in affairs of common life or government. It tends rather to subdivision into small units and self dependence with little or no reliance upon others. The example of Swiss love for independence is too well known to need comment. But while in thinking of Switzerland, we usually think of the nation as a whole being independent, inside the boundaries there is great independence of villages and communities. A common interest binds the whole together.¹⁵ The same thing is true of the people of

Daghestan. Though descended from widely different ancestors, and each division being independent as villages or communities, they have, through their common industry of sheep raising, been brought to an almost inconceivable unity.¹⁶ In Norway isolation developed tribes and clans each in its own valley and ruled by its own governor or petty king. It was danger from outside enemies that drove the people to unity. And though unified, the independence, democracy, and patriotism of old times remain.

We may be prone to think as we read of Kentucky blood-feuds and disorders, that the spirit of independence has "run riot" in our Southern Appalachians. President Frost¹⁷ says that the mountaineer has the independent spirit born of solitude. His fighting propensities are a survival of old world temper and ideals, which caused each man to wear arms at his side in order to protect himself from his foes. At that time to which the South, much more than any of the rest of our country, is nearer, man looked upon himself, rather than the law, as the protector of his home and loved ones. Frost thinks that the pugnacious spirit of the South is also due in part to the fact that the region was plundered by armies of both sides during the Civil War.

The lawlessness and marauding tendencies of mountain people, together with the tendency to outgrow it, under more favorable economic conditions has already been mentioned. Semple points out that the people of the Alps, those of the Scotch Highlands, and those of the Balkans and Caucasus were in early times robbers raiding the fertile plains for the products which their mountains did not produce. The moonshiners of Kentucky and the feudists of the same state are renowned for their lawlessness. But, within recent

years both seem to be coming to a greater state of orderliness and obedience of the laws of the country.

The lawlessness so characteristic of early stages of life in many mountains is probably the result of these people being, in their genesis, the remains of conquered people who have been driven from their homes on the lowlands by conquering peoples, and who having retreated to mountain fastnesses, where they are secure from further pursuit, and where they are confronted by vastly harder conditions of livelihood, yet where they can overlook the smiling productive plains containing their former homes, and, harboring deep feelings of revenge, make frequent raids and maraudings upon the fields of their conquerors. Later, these people becoming adapted to their severe environment and becoming more and more united among themselves on account of this environment, become more settled in their ways and the raiding becomes almost negligible.

Being so much separated from other people the mountaineers develop a characteristic curiosity and suspicion of strangers. One going into such regions is likely to be taken for a spy or detective of some sort. In our Southern mountains he is, of course, first taken to be a revenue officer looking for moonshine stills, and if found in the vicinity of these illicit devices, his life may pay the penalty. ¹⁸ Young writes that in Chili, a province of China, the men women, and children, all very poor and ignorant, gathered eagerly about him, the first foreigner they had ever seen, and watched even the smallest movement with deepest interest.

In hospitality the mountaineer is without a rival. His kindness and generosity, his desire to please and serve, are perfect, so long as one does not expect too much, or in some way anger him.

These people are entertaining and obliging even to the offering of personal articles for the use of the stranger. Food of whatever kind they may have and lodging, the best they can afford, are always at the disposal of the guest, as long as he shows himself to be such.

¹⁹One man tells how they always make a place for the stranger at the fireside. They bring an extra plate and invite the stranger to sup with them. They bring the cider jug from the cellar and insist upon his remaining over night out of the storm. The fireside on such occasions is always a cheerful place and one feels himself a member. The kindness with which the stranger is received is well told by Frost.²⁰ "Howdy, strangers? Light and hitch yer beasts. Ef yeow-all ken stand for one day what we-all hev to stand the year around, jes' kem in."

Keenan²¹ relates that the mountain hospitality of Daghestan is boundless. Cattle and sheep were barbecued and set before him. Every kind of food affordable was provided him. He was entertained by gay dances, and music of all kinds, and at night slept wrapped in a blanket at the door of one of the mountaineers.

Social conditions among mountain peoples differ widely. In Switzerland social opportunities are heightened by the presence of railroads and the coming and going of travelers and tourists. The people also live in villages and this does much to promote social ideas and customs among them. But usually because of the restrictions set by the environment, social conditions are at a very low ebb. The three main socializing institutions, the home, the school, and the church, all fall far short of what they should be for the promotion of community welfare in any sense of the word.

In the first place, the homes are of the very crudest type

imaginable. ²² These are in our South, generally a double arrangement of two log structures each about eighteen feet square and placed about fifteen feet apart, the intervening space being covered and used as a reception and dining room. Other adjuncts, smokehouse, loom-house, and spring-house are placed near. The "family" is supplied from its own "boundary" with cornmeal, string beans, dried fruit, "long sweetening," and hog meat. "Sang" (ginseng) and feathers are bartered at the "store-houses" for coffee, boots, and patent medicine. Because of the large number in the family the ventilation is often bad, especially in winter. Drainage around the homes, even in the mountains, is, through carelessness, and ignorance of natural laws, poor, and doubtless the cause of much disease and suffering among the people. The food supply is, in the main confined to the little tract upon which the family lives. It is often scanty and frequently lacks variety.

These drawbacks, to which are often added a poor quality of drinking water and poor cooking, in many cases, tend toward ill health, and indigestion and bad teeth are prevalent. Such homes, kept by parents, who are, in the light of present day knowledge, ignorant, are poor places for the rearing of children. Books are scarce or seen not at all, and few indeed are the homes, in sections where there is no printing press in an area of twenty counties, that can secure a newspaper. In fact, in the face of the high percentage of illiteracy, such things are not desired and probably would not be much used even if they could be had. There is little wonder amidst such conditions that the children marry young and attempt life for themselves.

Regarding education in mountain districts, and more

especially perhaps, in our own Appalachians, conditions have been sadly misrepresented. Much that has been written, has been by those, apparently unacquainted with rural conditions at large. Such writers are often too prone to draw comparisons of rural conditions with those of the better cities with the best of opportunities. Many also select, even unconsciously, no doubt, the poorest example that comes to their notice and hold it up as a fair sample of what is found.

Mountain sections with their general retardation, lack of communications, sparse population, lack of money with which to push forward an aggressive educational scheme, are necessarily and naturally backward in this respect. Because of lack of intercourse, with those outside of the immediate region there is lack of ideals and standards towards which the work may be directed, and without which school work necessarily fails. Because of restricted associations and narrowed extent of economic life there is lack of incentive. The mountaineer does not see the need of education as do others with broader opportunities. In general it may be said that with the untrained teachers, short term of school, poorly built and equipped houses, and long distances to be traveled, the mountain schools are very inferior to most of our rural schools.

Much that has been said of the schools of the mountains, applies to the church. It is backward for the same reasons and to about the same degree. Mountaineers are usually intensely religious, and have great reverence for God, though their religion often borders upon superstition. ²³ The Khirghiz nomads meet strangers with a stroking of the beard which signifies a prayer to Allah. ²⁴ At the close of meals and after passing high and dangerous passes he never forgets to return thanks to Allah. ²⁵ If the weather shows signs of

becoming bad, it is because Allah is angry.

²⁶In the mountains of Scotland, the people untouched by the Reformation remain firm Catholics to the present day. Others just outside of these have been touched by only the first wave of the Reformation and are Episcopalians.

In the Kentucky mountains, religion seems to be of the emotional kind. ²⁷The preacher uneducated is of the exhorting type but has a fair knowledge of the Bible. ²⁸The minister dresses very plainly, often in patched clothes, has on account of farm work, little time for preparing his sermons, and draws little or no salary, this often coming in the form of offerings or donations.

²⁹On account of the difficult communications and non-residence of pastors, services and appointments ^{are} exceedingly irregular. For this reason funerals are not, as a rule, held at the time of death. These are delayed for weeks and often for years. At the time set for the funeral which has been widely heralded, the preacher reviews in tenderest words the life of the deceased, recalling and dwelling upon old memories in a soul-stirring manner.

Woman, among mountain peoples often plays a difficult role. It is usually her lot to labor in the fields with the men in addition to caring for the family and home. In the remote mountains of Japan she is not considered by man to be his equal, and he refers to her as ³⁰"my stupid wife or the thing that lives in the back part of the house".

³¹In the western Alps along the Rhone, both women and men labor upon the terraced mountain slopes. They work under great difficulties, reaping the grain by hand and working Sundays much the

same as other days.

Miss Semple³² refers to the early marriage of woman in the Kentucky mountains. Not considered marriageable after the age of twenty, girls usually marry at the age of twelve or fifteen, and the men at the age of seventeen to twenty. The women begin bearing children early in life, rear large families, besides spinning, weaving, knitting, and bearing the burden of much of the farm work. Under the great strain placed upon her in such communities, woman ages much more rapidly than she ordinarily does.

³³Among the Mohammedans of the Asiatic mountains the fact that woman has much work such as caring for sheep and herds, in addition to her family cares, serves, in a way at least, to give her a greater degree of freedom. It is not possible for the Khirghiz to look after sheep and cattle while veiled. Neither is it convenient, where moving is frequent, to have a separate room for the wife. For these reasons Mohammedan women among the mountains have almost as much freedom as women of other religions. ³⁴Mohammedan women among the mountains of Nepal are only partially veiled.

The chief source of wealth of people of the mountains is the soil. The soil furnishes the food they eat, and in a general way the clothing they wear. The soil of mountain regions is often very poor, and unproductive and is settled only on alluvial fans and narrow flood plains. Shut in upon his mountain farm, the mountaineer makes the best of his environment. The soil, naturally given to erosion, and often infertile, has even under very adverse conditions, with proper handling, been made productive in the extreme.

³⁵Perhaps the best example of utilization of soil resources is to be found in the Alps of Switzerland, where, by careful terracing moun-

tain fields have been made which at the height of fifteen hundred and two thousand feet are said to produce two bottles of wine per square foot of surface. Not only is terracing resorted to, but in many cases, after building stone walls to hold it, soil has been carried in baskets and fields, small to be sure, are made. These terraces are located upon the sunny slopes where they catch the sun's rays at almost right angles and thus agriculture is carried on at these heights. Terracing is carried on along the Rhone to a height of almost thirty-one hundred feet. In the Appenines, Italy, terracing is also resorted to and the vine, olive, flax, rye, hemp, oats, and maize are grown by the skilled gardener race of people. In ³⁶Tibet terracing has been found at the height of eleven thousand feet, and among the ³⁷Indians of South America at the extreme height of eleven thousand five hundred feet. But mountain agriculture is necessarily a very laborious process because of the natural tendency of the soil to leach and wash away. With agriculture is commonly associated stock raising of some sort, usually sheep which can reach the higher and inaccessible heights, and cattle which pasture upon the lower lands. Not only do the sheep and cattle furnish clothing, milk and butter, but the manure furnished is, where the farmer has learned to use it properly, a resource of great value. The utmost conservation of this resource is practiced by the Khirghiz nomads.

While in the main dependent upon the soil, the people of many mountain districts, especially those which have been long settled have become so adapted to their environment that many distinctly mountain industries are carried on during the winter months, which are months of enforced leisure among mountain people not fully adapted to their environment.

Following the summer of herding, cultivation, and hay-making, in which men, women, and children participate, the people of Kashmir take up their winter tasks of wood and metal work. Articles of carved silver and copper, cloth, carpets, and Kashmir shawls are among their leading products. The watches, clocks, and wood carvings of Switzerland, as well as the toys and numerous small articles of Austria are well known. In Tibet jewelry, earrings, and charm boxes of gold and turquois are produced.

Such are some of the industries carried on in the older mountain regions of the world. Little has been done in newer countries like the United States where few improvements and modern methods have been carried into these secluded regions. Here the people plod on in a more or less primitive manner, work upon the sterile farms during the summer, and with the possible exception of spinning and weaving cloth for their clothing, do nothing during the winter.

The soil of the V-shaped Appalachian valleys is not conducive to prosperity in any sense of the word. But even if the soil yielded abundantly there would be little change under present conditions, save that it might serve to furnish a greater local food supply.

The Southern Appalachians contain much in the value of their mineral resources, which will sooner or later be demanded by the rest of the country and will be developed. Oil is known to exist in many of the counties but it is twenty-five miles to the closest railroad, and with producing fields under more favorable conditions, this has not been developed. It is also said that coal exists in every county of eastern Kentucky. These coal veins varying from twenty-four inches to fourteen feet in thickness are just beginning to be

developed.

Vast timber resources are also present in the fine oak, walnut, pine, elm, maple, and sycamore of these mountains. Little use has, up to the present, been made of them, except to supply the meager needs of the mountaineers. Much valuable timber, it is true has been cut and burned, or "deadened" to make new fields as the old ones become barren. Small amounts are also used by the few stave and saw mills scattered through the region. The time now seems fast approaching when all these valuable resources will be utilized. When they are opened and railroads and other roads enter this region, where many of the parents have never seen a railroad train, better times will follow.

³⁸ Much has been made by the outside world of the crooked politics of the Kentucky mountains. The mountaineers of this region have high political ambitions, are strongly partisan, and, when spurred on by moonshine whiskey and the clan spirit, have gone to extremes and blood has been drawn. But much of the strife and trouble of this region is stirred up by a few politicians who have made it a practice to exploit the mountaineers in every conceivable way. They have worked for personal aggrandizement rather than good government. They have kept the mountaineer in the dark, made him think it a disgrace to "scratch" his ticket while they have busied themselves with robbery of public treasuries of thousands of dollars paid in for public improvements. But the politics of this region are changing. ³⁹ The people have become awakened and are striving to elect representatives to the legislature who will really represent them. The sin of ballot "scratching" is passing and good men are returned for several terms to continue any constructive measures upon which they may be working.

III. Reasons for Existing Conditions

Much that pertains to and partially explains the existing conditions in remote mountain districts has already been intimated in the preceeding pages. These reasons may be briefly stated as relatively complete isolation from the outside world through lack of communications, steep, rocky and unproductive soil, lack of products that can be transported easily, and sparse population.

In the first place there is almost complete isolation from the world where progress has been going on. It is not so much that the peoples cannot get out of these regions, as that they have, because of their surroundings, come to the place where they do not want to get out. Some of them do leave the mountains, succeed in freeing themselves from the influences of their environment, and become active and energetic citizens. The early settlers of the Kentucky mountain valleys raised hogs and cattle, and the latter were driven in large herds to eastern markets. But the long trips, together with the probable competition of western cattle, did not favor the industry and the mountaineers gave it up and centered their attention upon tilling the soil, and became more and more isolated with each passing decade. The children of the early settlers, tied down by daily routine, had less desire to get out of the mountain coves than did those who had once lived on the outside. There was less to take them out of the mountains; there were no ties of friendship, or if these existed, they became weaker with increasing years. Their whole interests became centered in the mountain valleys, in their own small realms, until under these influences they have no desire to get out of the place which has been the family heritage for a century and a half.

So subdued has become the desire to travel or see anything

outside of the immediate small farm, that there are⁴⁰ women living in these mountains who have never been to the country store not more than five or six miles away, and who have not for years seen relatives just over the ridge. Isolation within itself tends to deaden the longings of the better nature which calls for culture and improvement, and to place in their stead desires for only the most meager necessities of life.

The effects of isolation become more noticeable when such communities as our Appalachians are contrasted with such a mountain country as Switzerland. In the latter the valleys are of the broad glaciated U-shaped type which give plenty of room for railroads and make their construction relatively easy as compared with the narrow V-shaped valleys of the Appalachians, where there is little or no room for railroads. The ease with which communications are established brings the Swiss into relation with the outside world. The world is not only open to them but comes to them; they do not have to get out to keep in touch with the world. The isolation of the open U-shaped valley is far less absolute than is that of the narrow shut in V-shaped valley.

The Swiss has the privilege of remaining upon his own mountain farm or of migrating to other parts of Europe or America, wherever he can better his advantages. Taking advantage of this privilege, there are yearly or seasonal migrations of these people to Italy, France, and other lands where they have better opportunities for earning money and a livelihood.

Another thing which contributes its share toward making the mountain sections of our country backward is the absence of products which can be transported easily and cheaply or one which combines

considerable value in small bulk. Among the Swiss, the Tyroleans, and other mountain peoples of Europe, skill in handwork has been developed upon a large scale. Watches, clocks, carved wood, metal work, and ornaments of various kinds fulfill this requirement, and the people prosper in a fair degree. Among the American mountaineers no such crafts have developed to any marked degree. Agricultural in the extreme, they depend directly upon the soil for all they have. The "moonshining" of eastern Kentucky, branded by many as the worst kind of lawlessness,⁴¹ but not looked upon by the mountaineer as such, is an attempt to meet this requirement. To him the "still" is a way of converting his surplus corn into a product which can be relatively easily carried from the mountains to the cities outside and exchanged for needed commodities. He is doing, or attempting to do the same thing which the mountaineers of Europe do--produce an article which combines value in small bulk--one which will help solve the problem of his environment. ⁴²"Moonshining" is practiced in the eastern Andine valleys of Peru with the same end in view. Here the product is aguardiente made from the sugar cane. It bears a high rate of transportation and at the same time yields a great profit. It is said that there is some illicit distilling of liquor in the ⁴³Green Mountains of Vermont, in cultured New England, where of all places it would be the least expected.

It thus becomes apparent that the extreme isolation of the mountain districts is for the most part responsible for the undeveloped and backward state of social, political, and economic conditions, which is found in those regions. Some have suggested that the school is the one great remedy for all the undesirable conditions found in the mountains. The possibilities of the school will be

treated in the next division of this paper. But be its possibilities ever so good, little will prove of lasting benefit, which does not carry with it provisions for breaking down this isolation.

IV. Constructive Geography

Having considered the conditions as they exist in mountain regions, and having located the causes and reasons responsible for such conditions, it remains to enquire what may be done to alleviate them. Realizing that the Appalachian region is of all the mountain countries one of the most isolated and backward as well as of greatest extent, our attention will be confined almost exclusively to problems relating to this region. The problem is as vast as the field to be reformed. Here is Frost's estimate of the whole.⁴⁴ "The mountain problem in our Southern States is due to a geological accident--the fact that this vast rugged section, extending from the Ohio River to Birmingham in Alabama and Atlanta in Georgia, has no coastline, no navigable stream, and no inland lakes. The extent of this region has been concealed by the fact that it was parcelled out among nine different commonwealths. Each of these states has a mountainous backyard, and these bunched together form one of the grand divisions of the continent. For convenience, we are giving this inland mountain realm the name 'Appalachian America'."

No doubt the Appalachian mountaineer and the problem which he represents to America has been misrepresented by many who have taken the darker side as a typical example. His lawlessness has been exaggerated. There is little doubt also that much that has been attempted in the way of relief through mountain settlement work has been misdirected and wasted. However that may be, the fact remains that this region, washed on all sides by the waves of progress, presents a formidable problem to our country. It is evident at the outset that any improvement which may be instituted must be, in part

at least, set in motion by outside forces. The mountaineer must be helped in order that he may help himself. ⁴⁵ Among the defects in settlement work seems to be a lack of cooperation between the promoters and those who go into the mountains to do the actual work. Another is lack of proper correlation of the enterprises with existing permanently organized institutions such as state systems of education, state boards of charities, and state boards of health. There is also a lack of understanding of social religious and educational problems peculiar to the people of isolated mountain communities. People have undertaken their work blindly; different religious denominations, often led by those not on speaking terms with one another have gone into the same cove and there attempted to do missionary work. Such failings have, almost as much as geographical barriers, tended to isolate the people.

Education, which some have exalted as the great ⁴⁶ "cure-all", while it has done much and is capable of doing still more, has often been misguided and misdirected. Berea College shows much of what can be done and how it should be accomplished. This college while controlled by a religious denomination is aided by the government, and is open to people of all denominations. It is a great example of the lines which educational effort must pursue. But education by itself can do but little. It will not of itself break down or remove the factors of isolation though it may be a means to an end. The causes of isolation must be sought out and in some way counteracted. The most hopeful solution is intelligent adaptation to geographic environment. Scientific agriculturists of the broad-minded type, really interested in the development of the soil resources of the country, will in the mountains find fields for study, investigation and

experimentation. Physicians and nurses interested in the building up of a strong and vigorous humanity, will here find a ready and waiting field. Engineers of a humanitarian bent will here find a field for the exercise of their skill and ingenuity.

Careful, detailed scientific study of the outstanding problems is essential and will lead to methods of solution. The fundamental problems met and solved, education and missionary effort will enter upon a fruit bearing career.

But all this, as I have already pointed out, must be, in the main, instituted from the outside. The mountaineers, rooted in backwardness and inactivity, and almost completely resigned to their fate will do and can do little. Communications must be established or all other attempts at progress must of necessity, in a great measure, fail, and the mountaineer remain in isolation. The natural resources of the region will in time demand the opening up of the country. Until that time the government must aid in the introduction of reform.

In Switzerland the beautiful scenery caused the opening up of the country. The demands of travelers and tourists were answered. Just as truly, though there are no splendid lakes and glaciers to be seen in our Appalachians, there is scenery here which will satisfy the desires of many who have the time and means for spending a portion of the year in the mountains. By taking the situation in hand, the government could establish⁴⁷ small parks which would become the recreation grounds for millions of our people who live east of our great central waterway. The area utilized in this way would, of course, be small. The region could not all be park, but even small areas appropriated to this use would do much in bringing the people

of the mountains in touch with people of higher ideals and standards.

Mention has been made of the fact that the people are distinctly agricultural. Soil culture has here, as in many other similar regions, been attended with ruthless waste through stripping off of the forests and allowing erosive agents to tear and gully the slopes. In this way the soil which has taken centuries to accumulate has been in a few years worn away and swept into the valleys.⁴⁸ No exact figures can be given for the limit of slopes suited to agriculture, since because of difference in texture one slope of ten degrees will erode faster than another of twenty degrees. In all cases erosion of forest lands, because of the extensive root systems of the trees and because of the leaf-coverings preventing rapid run-off, is at a minimum. Since this is true, the natural, logical, and sensible thing to do is to keep the land in forest. That practical scientific forestry can be successfully carried on has been demonstrated in different parts of the world, and there is no reason why it could not be just as successfully put into operation in our southern Appalachians.

⁴⁹In 1911, seventy-four per cent of this region was still in virgin forest of fine grade walnut, oak, hickory, poplar, and chestnut at the lower and middle elevations and beech and white pine at the highest levels. These forests form today the largest and most valuable hardwood area left in the United States and if properly cared for, they may be made the permanent source of our natural hardwood supply. With these facts in mind, it seems to me that our government should lose no time in at least supervising and regulating cutting and exploitation in this region.

Not only can much be done by forestation in the strict sense of the word, that is, forestation for the lumber product, but

trees which at the same time produce, besides good lumber, a crop of fruit, such as nuts, will also serve valuable ends. Here the chestnut grows in its native state and produces both good lumber and good crops of chestnuts which sell for good prices on the markets of the country. The tree is cultivated on the slopes of the French, Spanish, and Italian mountains, the nuts being both sold and used for the fattening of hogs. Hickory, walnut, oak, and pecan trees all, in one way or another, serve in this double capacity and should prove highly valuable. It has lately been shown that the⁵⁰ acorns of the oak are eighty per cent as valuable for fattening hogs as the same weight of corn. From this it appears that the oak has great possibilities since it is also said that sandy Minnesota lands which will scarcely produce twenty bushels of corn will produce a hundred bushels of acorns per acre.

But timber is not the only means of checking erosion. Under present methods, the land is planted to corn for a few years and then placed in pasture, but often too late to conserve the soil which is lost for all time to come. This loss could be avoided and at the same time economic ends be met if not furthered by placing the soil immediately in grass, after possibly one crop of corn. The pasture would serve for the grazing of sheep and cattle and thus a commodity would be produced which could walk to the markets which are at present more accessible than formerly.

Not only forest trees but fruit trees also thrive in this section. ⁵¹ Apples though sour, in this section, due to degeneration, will no doubt, when transportation routes are opened up, form a valuable product of the mountains. Peaches, when means of rapid transit are developed, will be grown extensively on the warm slopes.

Smith presents a sensible and practicable plan for preserving steep hill slopes for tree crops. The plan is to dig small "water pockets" along the hill slopes and plant the trees on the down slope side of the pockets. These small reservoirs will catch the water and supply it to the trees. They will also do two other things. They will supply the subsoil with water for springs and wells and enrich the supply of air moisture through evaporation and indirectly, through expiration of the better watered plants. These catching basins may also serve to prevent floods if used to great extent in our hill lands.

Strawberries which are grown at the present time all around this secluded region, will form a valuable crop both because of the fruit and because of the protection from denudation which is afforded to the soil by the roots of the vines.

Terracing of the mountain slopes so common in southern Europe is another means not only of conserving the soil, but also of increasing the number of acres under cultivation, by bringing under tillage slopes before unfit for farming. This method of agriculture has been practiced for centuries by the Indians of South America where it is carried on to the extreme height of eleven thousand five hundred feet. If this, though as yet unworkable in this country on account of scarcity of labor, should come into use in our Southern Mountains, our farming area would be considerably increased.

It will probably be many years before any adequate system of railroads will permeate this part of the country and no doubt large areas will of necessity remain remote and to a greater or less extent isolated. Something should be done to aid those people or to

them help
help themselves, who will long remain under such conditions.

Something in the form of root crops, though inadvisable for more than small areas, would help meet this requirement. There are several plants whose roots are valuable as drugs which are found in this region, and which, of late years, have begun to be cultivated. Among these are⁵³ginseng and⁵⁴golden seal. Large quantities of the former root are exported each year to China where it is used as a great panacea for all ills. Its value is perhaps largely "psychological" with the Chinese, though it is said to have some medicinal qualities. The latter root is extensively used as a drug in our own country. Where cultivated, both of these plants have two disadvantages; the initial cost is large, for both seeds and roots are very costly, and artificial shade has to be provided. Both of these disadvantages are naturally met in the southern Appalachians where the plants grow wild. They are already present, thus avoiding the heavy initial cost, and the forest trees afford proper shading.

Although cultivation of either upon an extended scale would probably soon swamp the market, and though the consumption of ginseng will, no doubt, gradually decline with increased education of the Chinese, it seems possible that cultivation of these plants on a limited scale would aid the mountaineers in their economic struggle. Both furnish an article of great value and small bulk, which could be easily sent out of the mountains. Yellow root is another plant of similar nature and also valuable as a drug. The plan is to grow these with the forest trees, whether grown for lumber or fruit, or in connection with orchard trees where these are grown.

The above proposed industries make provision only for summer work. To make good progress people must have employment through-

out the year. The growing of cattle and sheep has been mentioned. Both of these require at least some attention throughout the year and will furnish at least partial winter employment. ⁵⁵ A county of the Appalachians having a railroad and settled by a Swiss colony produced over sixty thousand pounds of cheese in 1889. This shows the possibility of cheese production which is a year long industry. Sheep grow well and feed upon the pearine which grows wild in the region. The fleeces are, however, small, and improvement would be necessary to make much return to the farmer.

In addition to these, some forms of handwork might be introduced and many articles which are imported could then be produced in our own country. Of course, this brings up the question of cheap labor. But since wages are already low in this region, something might be done. If parks were opened up in these mountains such industries would have greater possibilities.

Another possibility should not be overlooked for winter employment for men. If scientific forestry were introduced, the winter could be utilized as a time for selecting and cutting the timber and making it ready for market in spring and summer, when it can be handled to best advantage.

Such are the problems presented by the isolated mountaineer and his environment, and such are some of the schemes proposed for their solution. Those presented are not intended to include all possibilities for alleviating the wretchedness of these mountain peoples. Neither is it claimed that all of these are feasible or workable. I have tried to present some plans which seem to me will do much toward bettering the prospects of this frontier region in our midst. Some sort of transportation facilities is the first

requisite. This should be followed by education of the mountaineer not so much in his environment, but educating him to his environment, teaching him to take advantage of the opportunities of his surroundings, to help him help himself, by showing him what can be done by scientific methods. This will enable him to produce such products as combine the requisite value in small bulk and will do much toward improving his backward, wretched, and isolated state.

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